FY15 RSM-EWN IPR

SWG, Lower Matagorda RSM, Tricia Campbell

BLUF: Shoaling in the lower Matagorda Ship Channel (MSC) between the inlet and intersection of the GIWW and MSC has led to draft restrictions in recent years. Analysis of physical conditions and alternative dredging practices is needed to develop potential approaches that could be applied to increase channel availability.

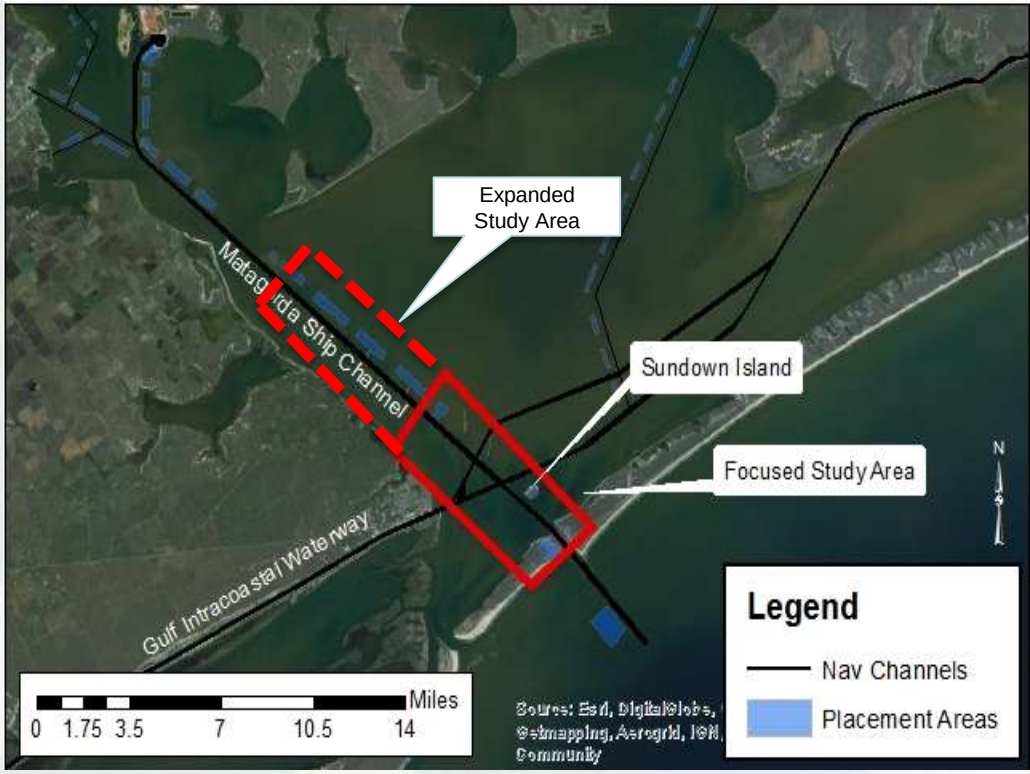
Problem Statement/Issue

- Issues maintaining project to authorized depth with available funding
- Draft restrictions requiring annual dredging
- Impacts MSC and GIWW projects

Approach to Address Problem

(non-technical)

- Information Gathering
  - Feedback from Stakeholders, Pilots, SWG Area Office regarding issues
  - Determine what data available
- "Brainstorm" potential solutions for reducing shoaling
- Model potential solutions to quantify any reduction in shoaling
- Determine possible ways to implement solutions



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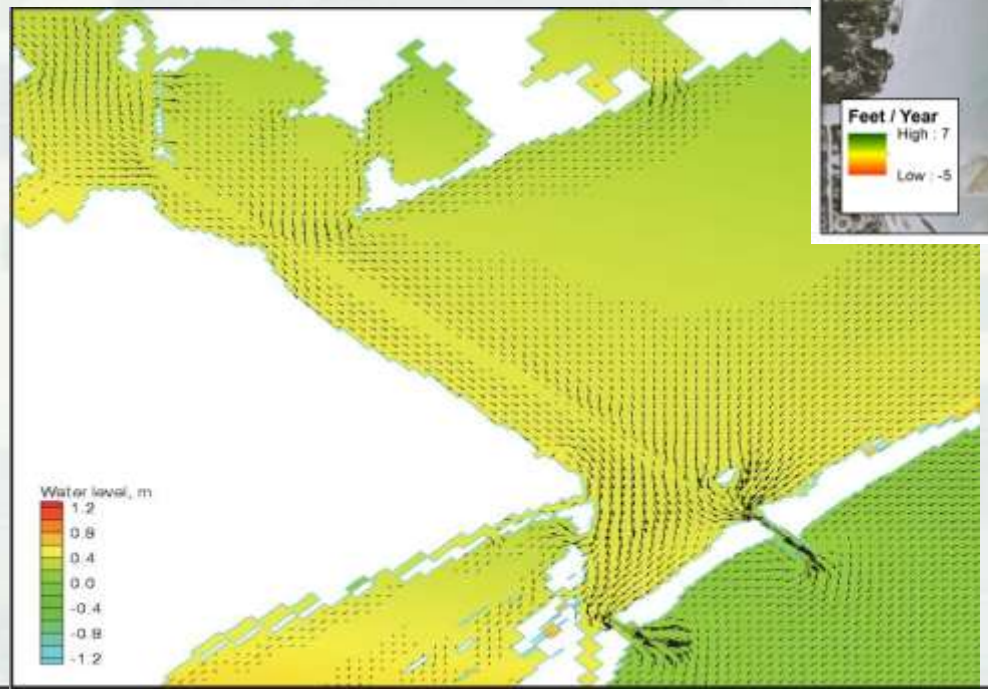
Approach to Address Problem
(Tools, Models, Technologies)

- Data Gathering
  - Survey data, dredging history, grain size
  - Pilot info
  - Previous studies and hydrodynamic models
  - Shoreline change data
  - Sediment budget
  - Info from Audubon Society
- Shoaling and Dredging Analysis
  - CSAT



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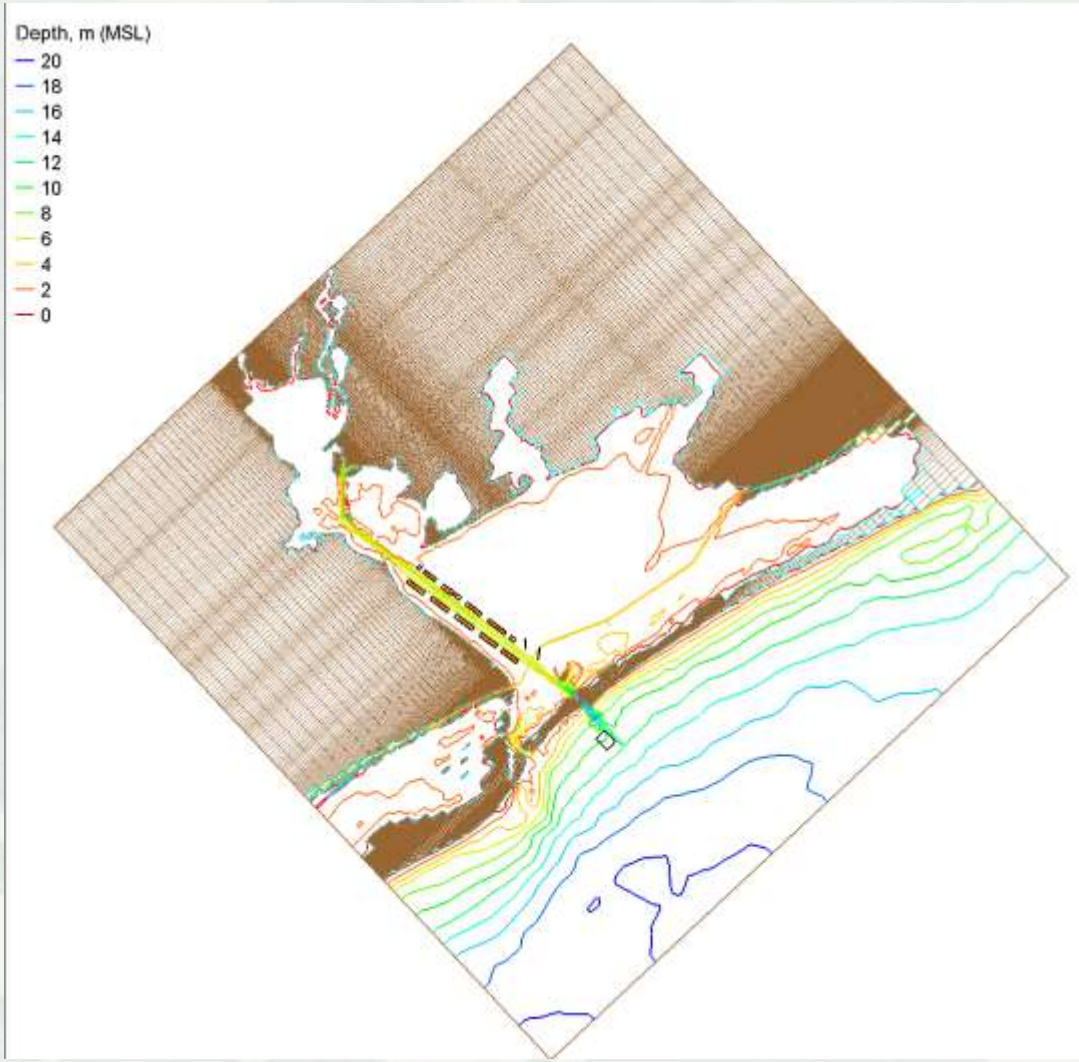
Approach to Address Problem
(Tools, Models, Technologies)
(continued)

- Review Coastal Processes and Develop Potential Solutions (narrow down to 3 or 4 to model)
  - Relocate PAs 6-10 to west side of channel
  - Semi-confine PAs 6-10
  - Place Sediment in Sundown Island in lieu of PA6
  - Place material “elsewhere” besides PAs 6-10
- Analyze Potential Solutions (ongoing)
  - Quantify each solution to determine reduction in shoaling and other potential benefits
- Ensure Data in Enterprise Systems (SBAS, eHydro, DMMP tools, ArcGIS to display data not supported by existing tools)
- Report



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USACE RSM PDT

- Tricia Campbell USACE-SWG
- Jacob Walsdorf USACE-SWG
- Eric Wood USACE-SWG
- Kim Townsend USACE-SWG
- Rob Thomas USACE-SWG
- Matt Duke USACE-SWG
- Leslie Olson USACE-SWG
- Edgardo Perez-Cosme USACE-SWG
- Lihwa Lin ERDC
- Lauren Dunkin ERDC

Stakeholders/Partners

- David M. Knuckey, Calhoun Port Authority
- Matagorda Pilots
- Waterway Users

What key leveraging opportunity(s) did stakeholders/partners provide?

- Knowledge of historic navigation issues, previous studies, ongoing initiatives outside of USACE
- Communication with Pilots and Waterway Users
- Feedback and involvement developing alternatives

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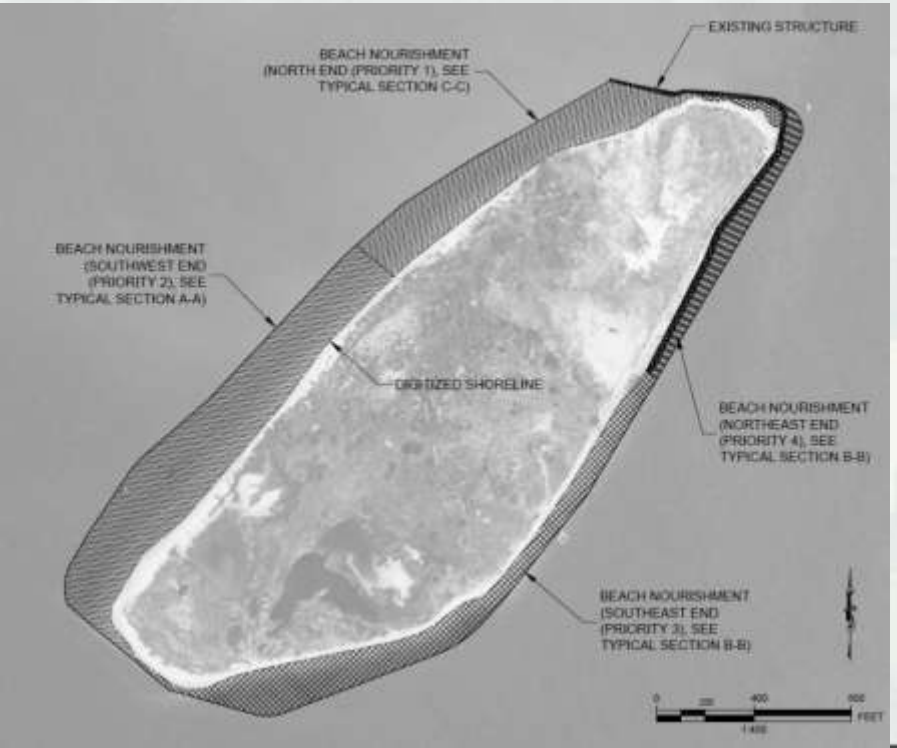
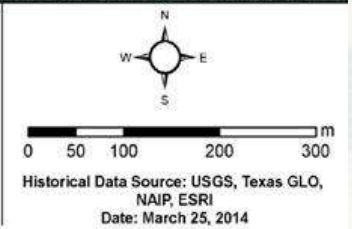
UPs – 3 Positives from effort

- Quantifiable solutions can potentially reduce dredging costs and stretch project funds further.
- Solutions can potentially benefit Government, waterway users, and non-Federal entities.
- This project will provide a common picture of physical processes and historical data.



Historical Shorelines of Sundown Island (1979-2013)

ATKINS



Pictures from "Sundown Island Shoreline Protection and Restoration Project, Conceptual Design Alternative Analysis," Atkins/Freeze and Nichols, Inc, Le Bas and Buzan, August 26, 2014

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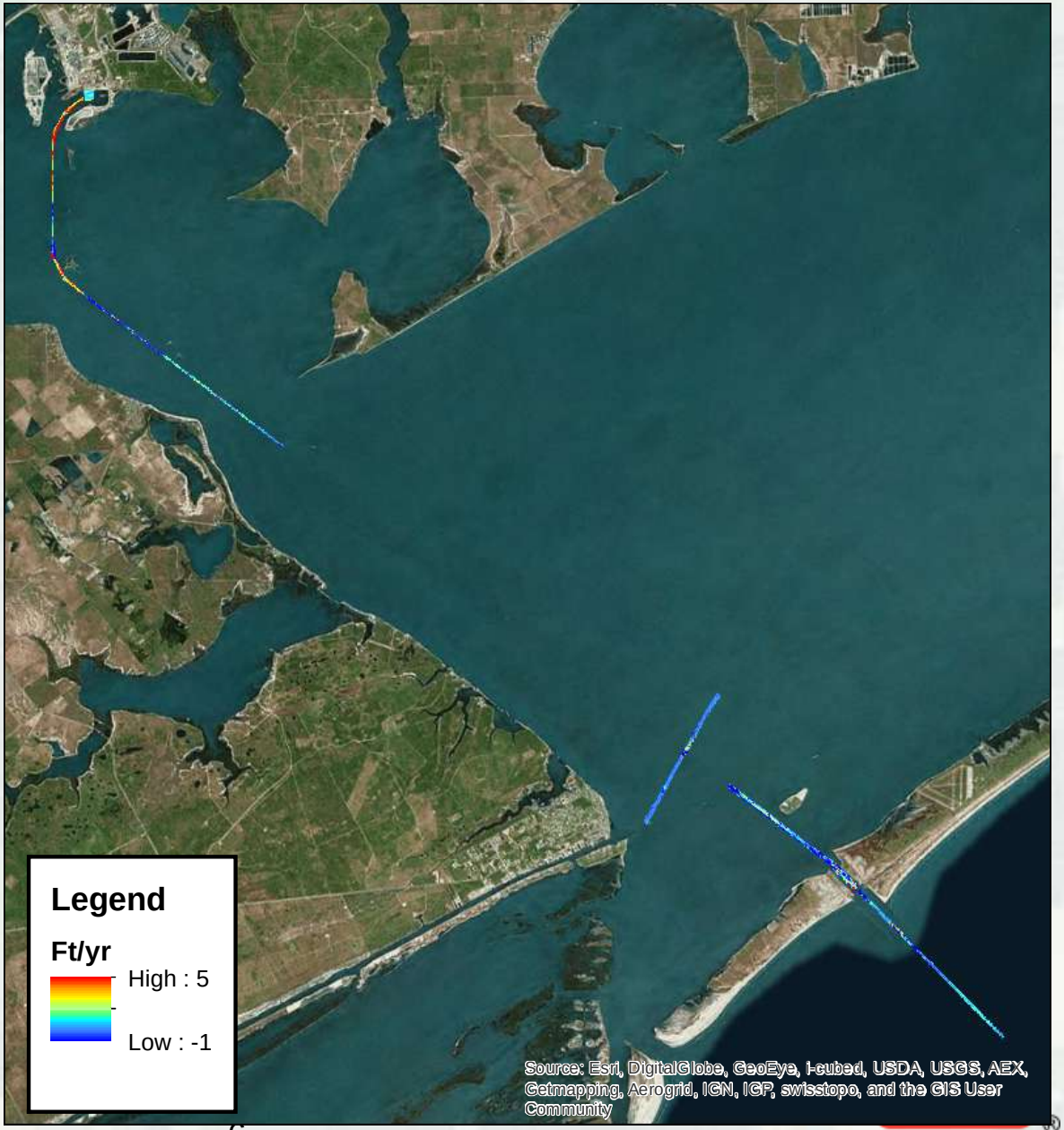
DOWNs – 3 Negatives from effort

- Data gaps: Limited historical survey data in some areas of channel (now using eHydro)
- Pros and cons for every solution. Solve one problem, create another.
- Implementation challenges on existing OM projects.



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Value to the Nation

- Cost savings/reduction in dredging quantities: to be determined upon completion of modeling of alternatives

- Value added: Navigation and reduced draft restrictions—Matagorda Ship Channel generates annual business revenue of over $2 Billion dollars. Draft restrictions equate to $24 Million loss per foot annually or $693 Million loss per five feet annually (based on 2012 CPT data).

- Environmental benefits—any material placed at Sundown Island (bird sanctuary) could potentially provide benefits. “Sundown Island Shoreline Protection and Restoration Project, Conceptual Design Alternative Analysis” report indicates that although many factors, apparent increase of nesting birds after dredge material placement at Sundown Island in 2002, 2006, and 2010.

- Improved partnerships, happy stakeholders = better team focus on projects, increased efficiency, less stress/tension

- Common operating picture helping to more efficiently maintain channel and to identify other potential RSM opportunities.